Proximity Sensors Capacitive, ATEX Thermoplastic Polyester Housing Type CB, Ø18, DC

TRIPLESHIELD™

CARLO GAVAZZI



- **Capacitive level sensor for solid, fluid or granulated substances**
- **Featuring *TRIPLESHIELD*™ sensor protection**
- **Rated operational voltage: 10-40 VDC**
- **Adjustable sensing distance 3-12 mm**
- **Output: DC 200 mA, NPN or PNP**
- **Make and break switching function**
- **LED indication**
- **High noise immunity**
- **Non-flush types**
- **Cable versions**
- **ATEX II 3DX T60°C**

Product Description

ATEX approved Capacitive proximity switches with sensing distance 12 mm non-flush mounted.
4-wire DC output with make (NO) and break (NC) switching. Grey Ø18 polyester housing with 2 m PVC cable.

Ideal for detecting grain or solids as level indicator in tanks, silos or containers.
Typical segments: agriculture, food & Beverage, conveyorbelts, plastic & rubber, etc.

Ordering Key

CB18CLN12NAAX

- **Capacitive proximity switch**
- **Housing style**
- **Housing size**
- **Housing material**
- **Housing length**
- **Detection principle**
- **Sensing distance**
- **Output type**
- **Output configuration**
- **ATEX**

Type Selection

Housing diameter	Rated operating dist. (S_n) [1]	Mounting	ATEX zone	Ordering no. Transistor NPN/cable Make & break switching	Ordering no. Transistor PNP/cable Make & break switching
M18	12 mm	Non-flush		**CB18CLN12NA**	**CB18CLN12PA**
M18	12 mm	Non-flush	22	**CB18CLN12NAAX**	**CB18CLN12PAAX**

[1] Object: Grounded steel plate

Specifications

Rated operating dist. (S_n) CB18CLN12	3 to 12 mm factory set at 12 mm
Sensitivity	Adj. 270° turn pot. meter
Effective operation dist. (S_r)	0.9 x $S_n \le S_r \le$ 1.1 x S_n
Usable operation dist. (S_u)	0.8 x $S_r \le S_n \le$ 1.2 x S_r
Repeat accuracy (R)	≤ 5%
Hysteresis (H)	4 to 20% of sensing distance
Rated operational volt. (U_B)	10 to 40 VDC (ripple incl.)
Ripple	≤ 10%
Rated operational current (I_e) Continuous	≤ 200 mA
No load supply current (I_o)	≤ 10 mA
Voltage drop (U_d)	≤ 2.5 VDC at max. load
Power ON delay	≤ 100 ms
Freq. of operating cycles (f)	30 Hz
Indication for output ON **Protection**	LED, yellow Reverse polarity, short-circuit, transients

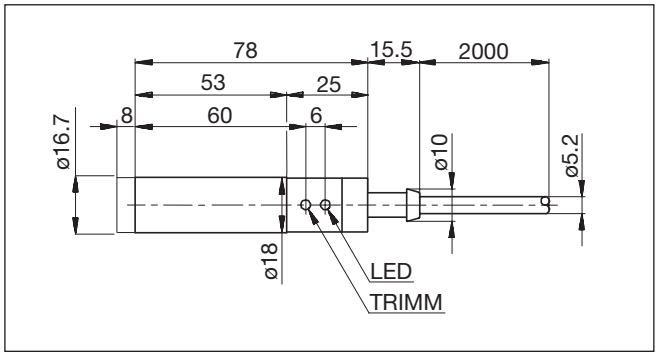
Environment Degree of protection	IP 67 (Nema 1, 3, 4, 6, 13)
Temperature Operating temperature Operating temperature (AX) Storage temperature	-25° to +80°C (-13° to +176°F) -20° to +40°C (-4° to +104°F) -40° to +85°C (-40° to +185°F)
Housing material Body Front Cable end	Grey, thermoplastic polyester Grey, polyester Polyester
Connection Cable	Grey, 2 m, 2 x 0.5 mm² Oil proof PVC
Weight Cable version	110 g
Approvals AX versions only	UL, CSA ATEX zone 22 dust* ⟨Ex⟩ II 3 DX T60°C IP67
CE-marking	Yes

* • The cable must not be exposed to a pulling force.
• Sensor housing must be protected against mechanical shock

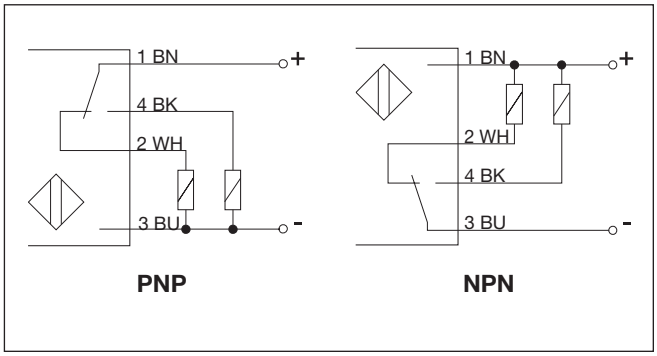
ООО «Сенсорен Электро» +7(495)150-48-00 info@sensoren.ru

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Dimensions



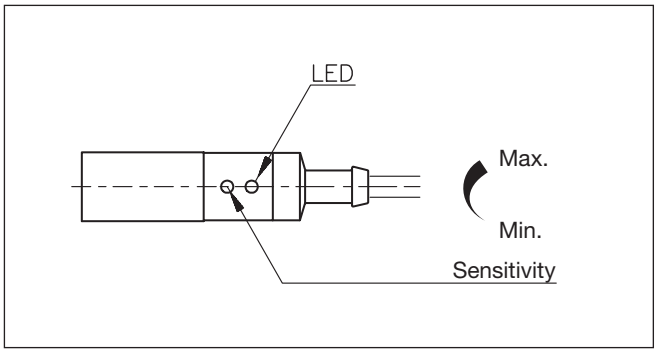
Wiring Diagrams



Adjustment Guide

The environments in which capacitive sensors are installed can often be unstable regarding temperature, humidity, object distance and industrial (noise) interference. Because of this, Carlo Gavazzi offers as standard features in all *TRIPLESHIELD*™ capacitive sensors a user-friendly sensitivity adjustment instead of having a fixed sensing range, extended sensing range to accommodate mechanically demanding areas, temperature stability to ensure minimum need for adjusting sensitivity if temperature varies and high immunity to electromagnetic interference (EMI).

Note:
Sensors are factory set (default) to maximum rated sensing range.



Installation Hints

Capacitive sensors have the unique ability to detect almost all materials, either in liquid or solid form. Capacitive sensors can detect metallic as well as non-metallic objects, however, their traditional use is for non-metallic materials such as:

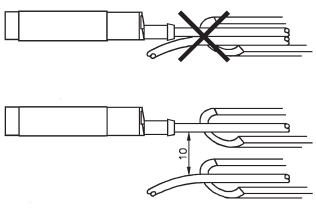
- **Plastic Industry**
  Resins, regrinds or moulded products.
- **Agriculture**
  Feed, solids or grain.
- **Wood Industry**
  Saw dust, paper products, door and window frames.

Materials are detected due to their dielectric constant. The bigger the size of an object, the higher the density of material, the better or easier it is to detect the object. Nominal sensing distance for a capacitive sensor is referenced to a grounded metal plate (ST37). For additional information regarding dielectric ratings of materials please refer to Technical Information.

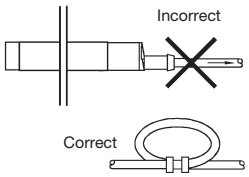
Delivery Contents

- Capacitive switch: CB18CL...
- Screw driver
- **Packaging:** Cardboard box
- Installation & Adjustment Guide

To avoid interference from inductive voltage/ current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables

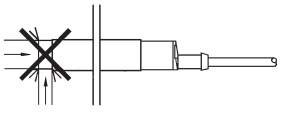


Relief of cable strain



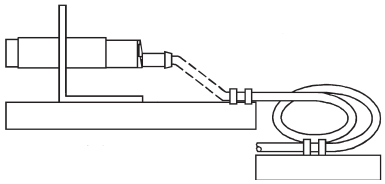
The cable should not be pulled

Protection of the sensing face



A proximity switch should not serve as mechanical stop

Switch mounted on mobile carrier



Any repetitive flexing of the cable should be avoided

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